Research Report 1289

AIR-GROUND ENGAGEMENT SIMULATION (AGES) FIELD TEST: USAREUR 1978

Donald E. Erwin, Earl S. Stein, Robert T. Root
Army Research Institute
and
John DiGrazia
U.S. Army Training Support Center, Fort Eustis, Virginia

SIMULATION SYSTEMS TECHNICAL AREA

U. S. Army

Research Institute for the Behavioral and Social Sciences

August 1980

Approved for public release; distribution unlimited.

U. S. ARMY RESEARCH INSTITUTE
FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency under the Jurisdiction of the
Deputy Chief of Staff for Personnel

JOSEPH ZEIDNER
Technical Director

FRANKLIN A. HART
Colonel,   US Army
Commander

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER Research Report 1289	**2. GOVT ACCESSION NO.**	**3. RECIPIENT'S CATALOG NUMBER**
4. TITLE (and Subtitle) AIR-GROUND ENGAGEMENT SIMULATION (AGES) FIELD TEST - USAREUR 1978		**5. TYPE OF REPORT & PERIOD COVERED** Final - August 1978
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Donald E. Erwin, Earl S. Stein, Robert T. Root and John DiGrazia		**8. CONTRACT OR GRANT NUMBER(s)**
9. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Research Institute for the Behavioral and Social Sciences (ARI) 5001 Eisenhower Ave., Alexandria, VA 22333		**10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS** 2Q163743A773
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Training Support Center, TRADOC Fort Eustis, VA 22333		**12. REPORT DATE** August 1980
		13. NUMBER OF PAGES 41
14. MONITORING AGENCY NAME & ADDRESS(If different from Controlling Office)		**15. SECURITY CLASS. (of this report)** UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Engagement simulation	Combat simulation
Air defense training	AGES
Simulation training	Signature simulation
Training systems	

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

A field experiment was carried out to assess the training effectiveness of the Air-Ground Engagement Simulation (AGES) tactical training system relative to conventional air defense training on the Army's three short-range air defense artillery (ADA) weapon systems: Chaparral, Vulcan and Redeye. Twelve squads were randomly assigned to one of two training conditions, AGES or conventional, and given one week of training. Performance was evaluated during each training exercise using a Controllers' Evaluation form, which is

DD ₁ FORM JAN 73 **1473** EDITION OF 1 NOV 65 IS OBSOLETE

a checklist and rating form. This procedure was followed for a second group of 12 squads. AGES squads on the Chaparral and Vulcan showed improved performance through the third day of training. This improvement was superior to that of conventionally trained squads. Redeye teams trained with AGES did not demonstrate greater performance than that achieved with conventional methods.

A demonstration of a three-dimensional engagement simulation was accomplished during a third training week. This exercise consisted of integrating AGES with ground manuever engagement simulation known as REALTRAIN. Personnel involved stated that the training was highly realistic and motivating.

AIR-GROUND ENGAGEMENT SIMULATION (AGES)
FIELD TEST: USAREUR 1978

Donald E. Erwin, Earl S. Stein, Robert T. Root
Army Research Institute
and
John DiGrazia
U.S. Army Training Support Center, Fort Eustis, Virginia

Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A	

DTIC
COPY
INSPECTED
2

Submitted by:
Frank J. Harris, Chief
SIMULATION SYSTEMS TECHNICAL AREA

Approved by:

Edgar M. Johnson, Director
ORGANIZATIONS AND SYSTEMS
RESEARCH LABORATORY

This Research Report, <u>Air-Ground Engagement Simulation (AGES) Field Test--USAREUR 1978</u>, was a combined effort between Donald Erwin, Earl Stein, and Robert Root from ARI and John DiGrazia from the U.S. Army Training Support Center, Fort Eustis, Va.

This report, under Army Project Number 2Q163743A773, is a study in combat unit training--more specifically, a study in the development of an air-ground engagement simulation training system. The development of AGES provided the researchers an opportunity to study troops in a realistic training environment where tactical behaviors could be learned and practiced.

JOSEPH ZEIDNER
Technical Director

AIR-GROUND ENGAGEMENT SIMULATION (AGES) FIELD TEST--
USAREUR 1978

BRIEF
_____

Requirement:

   To provide a realistic combat training system for short-range air defense
squads and helicopter pilots which would produce higher tactical proficiencies
than conventional training techniques.

Procedure:

   In Phase 1A, 12 weapon squads participated in the same set of field exer-
cises over a 4-day period in which each exercise involved defending a critical
asset against an aggressor. Four of the weapon squads were equipped with Chap-
arral missiles, four with Vulcan missiles and four with Redeye missiles. Each
of the separate missile squads were split into two squads each, with two re-
ceiving Air-Ground Engagement Simulation (AGES) training while the other two
received conventional field training. The aggressor was composed of three
Scout helicopters and two Cobra-TOW helicopters.

   In Phase 1B, another set of 12 weapon squads with the same background in
missile systems as above, were similarly trained over another 4-day period.

   Performance data were collected from both the AGES and the conventionally
trained squads for each set of field exercises. Data on job satisfaction and
perceived training effectiveness from the field exercises were also collected.
Helicopter pilots rated the effectiveness of their activities and provided feed-
back to air defense squads on how and why ground targets could be acquired.

   In Phase II, a series of combined AGES and REALTRAIN engagement simulation
exercises was conducted to evaluate the feasibility of integrating the two
training simulations. The exercises utilized a convoy consisting of 2½-ton
trucks, jeeps, Vulcans, tanks, and infantry transporting supposedly valuable
material across a 20 km route. An aviation aggressor consisting of three Scouts
and two Cobra-TOWs, augmented by an infantry squad with anti-armor weapons and
two tanks, ambushed the convoy along the route. Exercise control procedures,
casualty assessment techniques and After Action Review procedures were
evaluated.

Findings:

   AGES training yielded relatively greater increases in tactical proficiency
than conventional training for Chaparral and Vulcan squads. Cobra attack heli-
copter pilots rated the effectiveness of attack and observation helicopter teams
twice as high after 4 days of AGES exercises. Leaders and controllers, given
the choice of AGES, conventional, live-fire, and by-the-numbers battle drill

training, chose AGES training to fill an average of 49% of their training time as opposed to only 21% for live-fire, and 16% for conventional and battle drill exercises. Participants in AGES exercises exhibited competitiveness and enthusiasm for what was perceived as realistic, relevant training.

The results of Phase II showed that AGES and REALTRAIN can be integrated for effective three-dimensional engagement simulation training. Limitations on the size of the exercise are a function of the scope of the tactical situation and the density of critical events per unit time.

Utilization of Findings:

These findings provided empirical evidence that AGES is an effective alternative to conventional air-ground field training for short-range air defense weapon crews and attack and scout helicopter teams. The AGES system warrants serious consideration for preliminary implementation in selected user communities. (AGES was implemented during the fourth quarter of FY79 at the Air Defense School, Fort Bliss, Tex.)

REALTRAIN exercises can be run in conjunction with AGES exercises. Engagement simulation exercises involving infantry, armor, air defense artillery, and rotary-wing aircraft elements can be conducted for effective combined arms training. Specific guidelines for integrating AGES and REALTRAIN need to be formulated, but the findings of this test indicate that the concept is both possible and practical.

AIR-GROUND ENGAGEMENT SIMULATION (AGES) FIELD TEST--
USAREUR 1978

CONTENTS

LIST OF FIGURES

CONTENTS (Continued)

ACRONYMS AND ABBREVIATIONS USED THROUGHOUT THIS REPORT

AAR	Army Area Representative
ADA	Air Defense Artillery
AGES	Air-Ground Engagement Simulation
APC	Armored Personnel Carrier
ARI	U.S. Army Research Institute for the Behavioral and Social Sciences
ARTEPs	Army Training and Evaluation Programs
COBRA	AH-1 Huey Cobra Helicopter
CP	Command Post
FOP	Forward Observation Post
FU	Fire Unit
IR	Infrared
NCOIC	Noncommissioned Officer in Charge
NOE	Nap-of-the-Earth
PTL	Primary Target Line
REALTRAIN	Engagement Simulation Training System for Combined Arms Teams
SCOPES	Engagement Simulation Training System for Infantry
SG	Squad Gunner
SL	Squad Leader
TOW	Tube-launched, Optically-tracked, Wire-guided Missile
TRADOC	Army Training and Doctrine Command
USAREUR	United States Army, Europe

AIR-GROUND ENGAGEMENT SIMULATION (AGES) FIELD TEST--
USAREUR 1978

INTRODUCTION

As an extension to engagement simulation training systems for infantry
(SCOPES) and for combined arms teams (REALTRAIN), the Army Research Institute
for the Behavioral and Social Sciences (ARI) developed a tactical training sys-
tem for two-sided, free-play combat simulation between short-range air defense
artillery and rotary wing aircraft. The purpose of developing an air-ground
engagement simulation (AGES) training system was the same as that for SCOPES
and REALTRAIN--to give troops the opportunity to participate in a realistic
training environment where proficient tactical behaviors could be learned and
practiced.

AGES was first tested in 1977 at Fort Bliss, Tex. The Air Defense Board
simultaneously conducted a week of AGES exercises in conjunction with a test of
laser casualty assessment equipment. This test was designed to evaluate the
concept of engagement simulation for short-range air defense squads and rotary
wing aviation. Casualty assessment and exercise control procedures, data col-
lection and performance measurement methods, and signature simulators were eval-
uated. The test at Fort Bliss allowed ARI scientists and Air Defense School
training developers to determine which components of the system required refine-
ment. The test demonstrated that engagement simulation for tactical field
training of short-range air defense weapon systems and rotary wing aviation was
feasible and that certain refinements held promise for achieving the desired
training purpose.

The AGES test in U.S. Army, Europe (USAREUR) was designed to determine the
training effectiveness of engagement simulation in the air-ground combat envi-
ronment and to determine the flexibility of AGES for use with other types of
engagement simulation. Specifically, the test was divided into two phases with
the following objectives:

1. **Phase I: AGES Validation Objectives**

    ● To collect tactical performance and attitudinal data on the relative
      training effectiveness of AGES and conventional training for air
      defense artillery (ADA) and aviation.

    ● To evaluate performance measurement procedures for use in relevant
      Army Training and Evaluation Programs (ARTERs).

2. **Phase II: AGES-REALTRAIN Integration Evaluation Objective**

    ● To determine the flexibility of integrating AGES and REALTRAIN.

The TRADOC System Manager for Tactical Engagement Simulation, an office in
the Training Support Center at Fort Eustis, Va., was the Army Training and Doc-
trine Command sponsor of the AGES test and of the engagement simulation program
at ARI. The 8th Infantry Division provided the support for the test, which was
held just south of the Lahn River, approximately 45 km northwest of Frankfurt,
Germany. The test was conducted from 10 June 1978 to 5 July 1978.

PHASE I

Test Design

The test design for Phase I was basically a comparison between training with and without AGES for ADA weapon squads and an assessment of the training benefits of AGES for attack and Scout helicopter teams.

The test design for Phase I is shown in Figure 1. In Phases IA and IB, two squads for each type of weapon from a pool of four Chaparral, four Vulcan, and four Redeye squads were assigned randomly to the AGES training program; while the other two squads from each weapon team were assigned to conventional training. During Phases IA and IB, both ADA training groups participated in eight tactical exercises over a 4-day period. For each exercise, the AGES and conventional squads shared the same scenario, mission orders, and aggressor (three Scout helicopters and two Cobra-TOW helicopters).[1] However, the conventionally trained squads were not provided signature simulators, did not have a capability for realistic realtime casualty assessment and did not participate in After Action Reviews. The question to be answered by this research was: Do the critical components of engagement simulation training (signature simulation, casualty assessment in free-play interaction with an aggressor, and After Action Reviews) make a difference in the effectiveness and efficiency of field training exercises for the air defense artillery and rotary wing aircraft units involved?

The field exercises were completely free play and administered by a control and data collection network manned by enlisted men and junior officers from the ADA and aviation battalions supporting the test. The testing schedule for each of the 2 weeks (Phase IA and IB) consisted of the following:

Monday	Tuesday-Friday
Shakedown exercise	Two exercises per day, am/pm

Procedure

Situation and Mission Order. As background for each of the eight exercises, both the ADA battery commander and the aviation leader were briefed using a simulated operations order. The general tactical situation used for all eight exercises was that the enemy had attacked across the international border with a large motorized armored force: "It is estimated that the attack is aimed at destroying allied defenses before reinforcements can be effective. The most likely objective in the Corps area is the Frankfurt-Wiesbaden complex and crossings over the Rhine River."

Prior to each exercise, the ADA battery commander was given a specific mission order to support the 8th Infantry Division (which was defending in a sector containing the test site) by providing low- and medium-altitude air

---

[1] The aviation aggressor for each exercise was taken from a pool of approximately four Cobra-TOWs and six Scout pilots.

PHASE I A & B

2 — CHAPARRALS — 2   3 SCOUTS

2 — VULCANS — 2   VS.

2 — REDEYES — 2   2 COBRA-TOWS

AGES   CONVENTIONAL

◆   ◆   ◁ SITUATION AND MISSION ORDER

◆   ◁ SIGNATURE SIMULATION

◆   ◁ CASUALTY ASSESSMENT
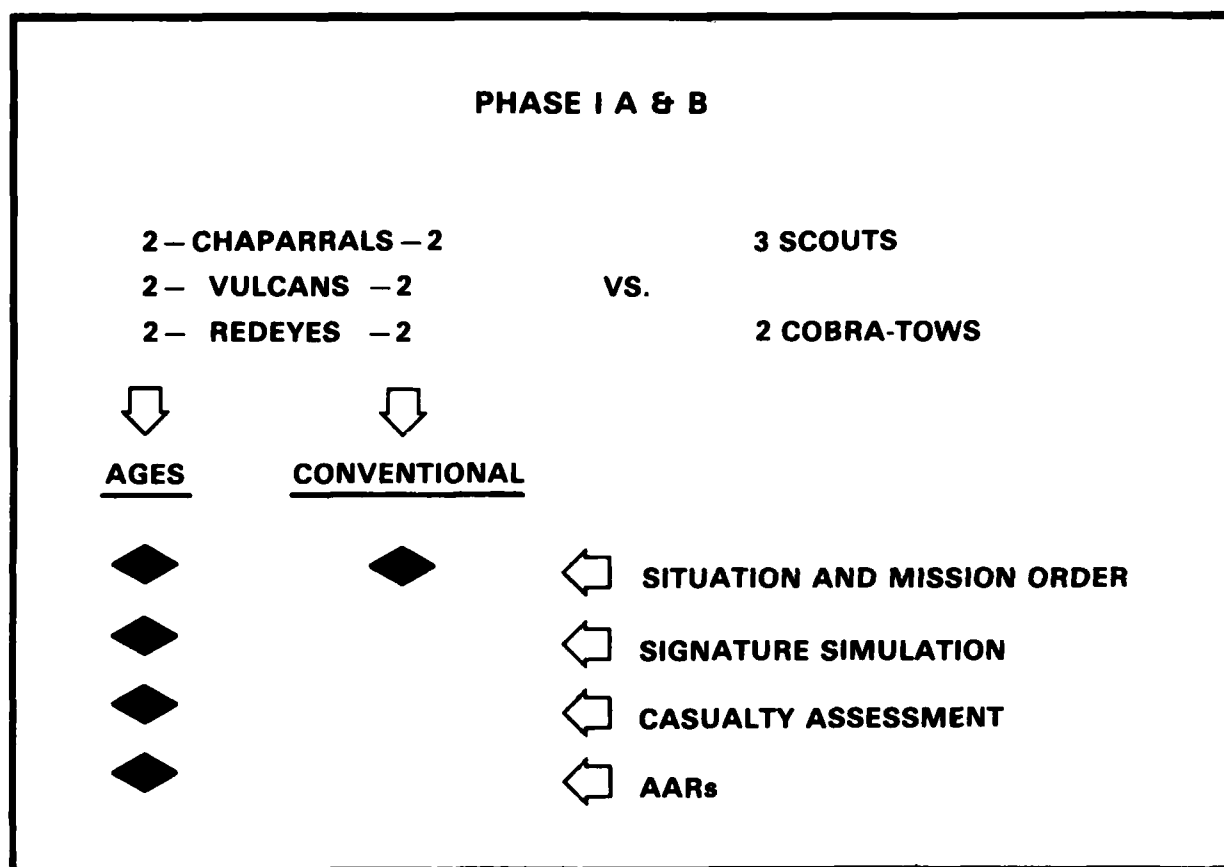
◆   ◁ AARs

Figure 1. AGES test design.

3

defense protection for various priority assets throughout the division. The location of the priority asset was varied across the eight exercises. The aviation aggressor leader was given a mission order in which he was instructed to perform a zone reconnaissance in a specific time interval using specified phase lines.

The battery commander and the aviation team leader had complete freedom in deciding how they would execute their mission order for that exercise. Apart from specified phase lines for the aggressor, which were necessary for exercise control purposes, test personnel placed no constraints on the exercise. This freedom allowed unit leaders to exercise their own tactical initiative and judgment and also provided the opportunity for realistic engagements to occur between ADA weapon systems defending a critical asset and the aviation aggressor moving through a zone. The battery commander briefed both AGES and conventional ADA squads on his plan, and both squads used the same tactical radio frequency. In terms of the tactical situation, both AGES and conventional squads received the same input.

Two types of terrain were used during the AGES test. One type of terrain, used during 2 days of each week, favored the ADA: rolling farmland with large open areas provided clear fields of fire for ADA weapons camouflaged along tree lines. For the other 2 days of each week, terrain favored aviation: more rugged countryside provided cover and concealment for helicopters flying nap-of-the-earth (NOE).

Signature and Weapon Effects Simulators. Signature simulators are an important component of engagement simulation because the firing of a weapon can lead to position disclosure, forcing the firer to relocate or risk capture or destruction by the enemy. These devices also provide troops the cues and stimuli they would experience in combat. This realism leads trainees to perceive the training environment as realistic and relevant to the learning of combat survival skills. Weapon effects simulators are also important because they let firing elements know that they have engaged a target.

Aircraft weapons had the following simulators:

1. Signature Simulators. Each Cobra-TOW was equipped with the following signature simulators:

   - 2.75" rocket: Both inboard pods were equipped with a device that could provide up to 19 flashes per pod to simulate rocket firing. The device consisted of a bank of flash bulbs, easily visible at 1,500 meters.

   - TOW: The two outboard TOW launchers were each equipped with a landing light in an expended TOW tube that was lit for 6 seconds when a TOW missile was "fired."

   - 7.62" minigun: The chin turret of each aircraft was equipped with a strobe that flashed at the rate of six times per second when the minigun was being fired. This device was visible at 1,000 meters. (Because of center of gravity problems, however, the device was only used during the first week of the test.)

4

2. <u>Weapon Effects Simulators</u>. Both the Cobra-TOWs and Scout helicopters were equipped with smoke grenades attached to skids that could be activated by a radio transmitter from the ground control station. This device was used to "kill" aircraft after successful engagements by ADA weapons.

ADA weapon systems had the following simulators (only those squads participating in AGES training were equipped with signature and weapon effects simulators):

1. <u>Chaparral</u>: The two AGES Chaparrals in each exercise were equipped with training missiles with infrared (IR) tracking heads. Signature simulation was provided by a device that provided a flash of light using flashbulbs and ignition of a minismoke munition when the missile was fired.

2. <u>Vulcan</u>: The two AGES Vulcans were equipped with the Vulcan engagement simulator developed at Fort Campbell, Ky.; this device consists of a spotlight wired to the firing circuit of the weapon, visible at approximately 1,200 meters.

3. <u>Redeye</u>: The two AGES Redeyes were equipped with a flashbulb and a minismoke. When a missile was fired, the flashbulb and minismoke were ignited, providing a flash and lingering smoke to disclose weapon position and force the gunner to displace to an alternate location. Each Redeye team was given a basic load of six missiles.

<u>Casualty Assessment</u>. For each AGES exercise, there was an exercise control system as shown in Figure 2. The function of the control system was to assess casualties and collect performance information for the After Action Review. (Figure 2 also shows portions of the ground control system used in Phase II when REALTRAIN elements were integrated into the exercise. Phase II will be discussed below.)

In a ground control center, a ground controller and an air controller worked with a map of the exercise area and had radio communications with the ADA controllers, with each AGES-ADA weapon and with pilots (who served as their own controllers). For each Chaparral, Vulcan, and Redeye squad, the assigned controller (or data collector, in the case of the non-AGES weapon systems) recorded the time and direction of each aerial target acquisition and or engagement on a data collection form and reported this information as it happened to the ground controller.

ADA controllers for the AGES weapons determined whether or not the squad achieved a kill by using a simple probabilistic method.[2] When the ground controller received a kill message from a weapon controller, he informed the senior controller, who then activated the remotely controlled smoke grenade on the skid of the killed helicopter. For air-to-ground engagements, pilots reported to the

_____

[2]This method involved drawing marbles from a bag. For Redeye and Chaparral, there were eight kill marbles and two miss marbles in the bag. The Vulcan Controller had one kill and nine miss marbles but withdrew one marble without replacement for each 6-second burst.

ADA GROUND CONTROLLERS

PILOT CONTROLLERS

CHAPARRALS

VULCANS

REDEYES

COBRAS

SCOUTS

PHASE I

DATA FOR AAR

GROUND
CONTROLLER

AIR
CONTROLLER

SENIOR

CONTROLLER

ADMIN DECISIONS

REALTRAIN
CONTROLLER

G C C
R O E
O N N
U T T
N R E
D O R
   L
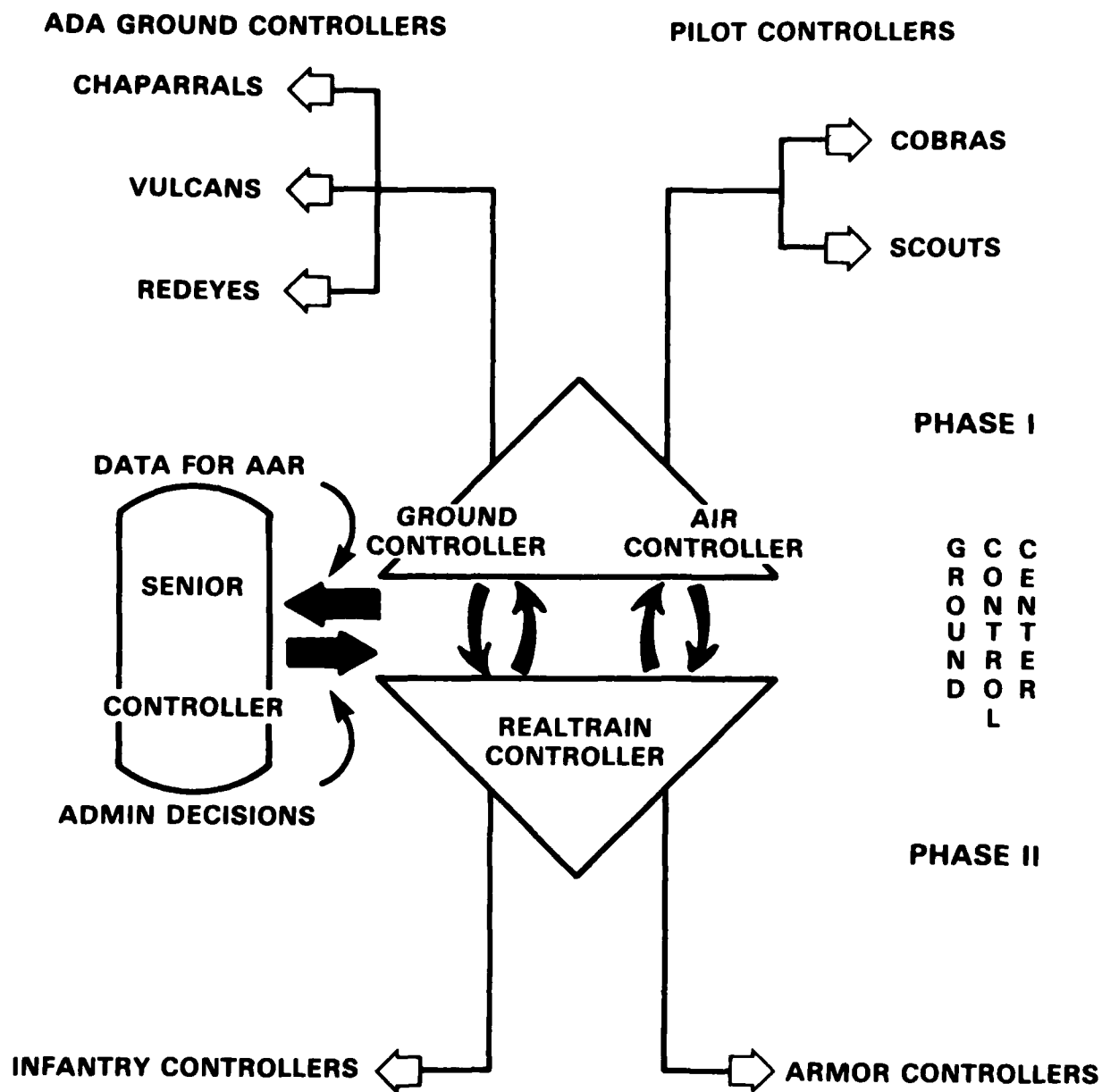
PHASE II

INFANTRY CONTROLLERS

ARMOR CONTROLLERS

Figure 2. AGES exercise control system.

6

air controller when they engaged a target. The air controller then used a casualty assessment table to determine whether a casualty should be assessed. If so, he informed the ground controller that a particular ADA squad had been killed or should be suppressed. The ground controller then told the controller with the appropriate squad to ignite a smoke grenade to signal that the weapon had been destroyed and to terminate the activities of the crew. Using an exercise map in the ground control center, as shown in Figure 3, the ground and air controllers maintained a graphic record of the avenues of approach of the various attack and observation helicopter teams and the significant events (acquisitions, engagements, and kills) along those routes. The senior controller, who coordinated activities within the ground control station, then used this information for the After Action Review that followed the exercise.

In Phase I, data on ADA weapon squad performance were collected for conventionally trained and AGES squads. Conventionally trained squads did not have casualty assessment, so data collectors unobtrusively collected data on tactical behaviors. The collectors did not indicate if the squad had been killed or suppressed and did not communicate acquisition and engagement information to the ground control center.

After Action Reviews. After each exercise, the helicopter pilots and personnel from the AGES squads were brought together for an After Action Review led by the senior controller. Using the data on significant events gathered during the exercise by the network of controllers, the senior controller reconstructed the exercise and solicited information from individuals and squads involved in the action concerning what they might have done right or wrong. By fostering a free exchange of information between both sides and using the friendly spirit of competition that developed, the senior controller insured that soldiers were recognized for tactical behaviors correctly executed and were discouraged from repeating those that were incorrect or ineffective.

A variety of data were collected during Phase I to help meet the two test objectives: to determine if AGES trained more effectively than conventional field exercises, and to evaluate various performance measurement procedures for eventual utilization in ARTEPs. Data collection procedures, instruments used, and the results obtained are discussed in the next section.

Results

Controller Evaluation Form. One of the primary data collection instruments was the controller evaluation form. Controllers with AGES and data collectors with conventionally trained ADA squads used a combination behavior checklist and rating form that focused the controllers' attention on more than 50 specific behaviors associated with proficient weapon system operation. The checklist included the following elements:

● Planning air defense--did the squad know its tactical mission?

● Understanding warning order--did the squad know the current enemy and friendly situation?

● Selecting positions--did the squad select positions on the basis of cover and concealment?

7

Figure 3. Ground control station in operation.

8

● Occupating positions--did the squad employ camouflage in its position?

● Conducting sustaining operations--did the squad displace to alternate locations after firing?

Appendixes A, B, and C shows the separate forms for Chaparral, Vulcan, and Redeye weapon crews, respectively.

Figure 4 shows results for Chaparral squads. Performance data for Days 1 to 4 have been combined for Phase IA and Phase IB. Each data point represents the average summary score for eight forms: two squads (AGES or conventional), two exercises per day, and two phases. The average summary score aggregates the percentage of listed behaviors observed, the number of above average ratings (greater than 5 on a scale of 9), and the overall average rating.

The results show that on Day 1 there was an obvious difference in baseline performance. Squads were randomly selected, so this disparity in performance was not expected. Days 2 and 3 show improvement for AGES squads but not for the conventionally trained squads. This effect is summarized in the lower chart in which the percentage improvement over baseline performance for each day is shown. AGES squads demonstrate improvement from baseline for each day of the week.

Why would conventionally trained squads do poorer after several days in the field? When air defenders participate in field exercises the requirement is to go to a specified location, set up, camouflage, and track aircraft that cannot be shot down. One could speculate that the squad becomes bored, frustrated, and often careless in executing its tactical duties the longer they are in the field. Consequently, any ratings of proficiency, diligence, and dedication of a squad in executing tactical duties would reflect these effects. Also, conventional Chaparral squads did reasonably well the first day and had some latitude to decrease performance. The decrease in performance for both AGES and conventional groups during Day 4 may be explained by several factors. For example, the fact that the fourth day was a Friday and the beginning of the weekend may have been sufficient to diminish soldier motivation and subsequent performance.

Figure 5 shows for Vulcan squads that by Day 2 AGES·squads were more proficient than were conventionally trained squads. While conventionally trained Vulcan squads did improve, it took an extra day of field training for them to reach the level of proficiency exhibited by AGES squads in less time.

The results for Redeye teams are shown in Figure 6. The AGES and conventional squads were obviously unmatched, based on the chance pairing of these specific squads. However, the figure shows that both groups of squads improved their overall performance on Day 2 and that both groups performed somewhat more poorly on Days 3 and 4 than they did on Day 2. The conventionally trained Redeye squads never came close to achieving the level of performance reached by the AGES squads, even by Day 4.

In summary, the results obtained from the controller evaluation form show that, for the behaviors evaluated, the performance of the AGES squads improved more quickly than did the performance of squads trained by conventional means, though by the end of the fourth day of training both groups were performing at
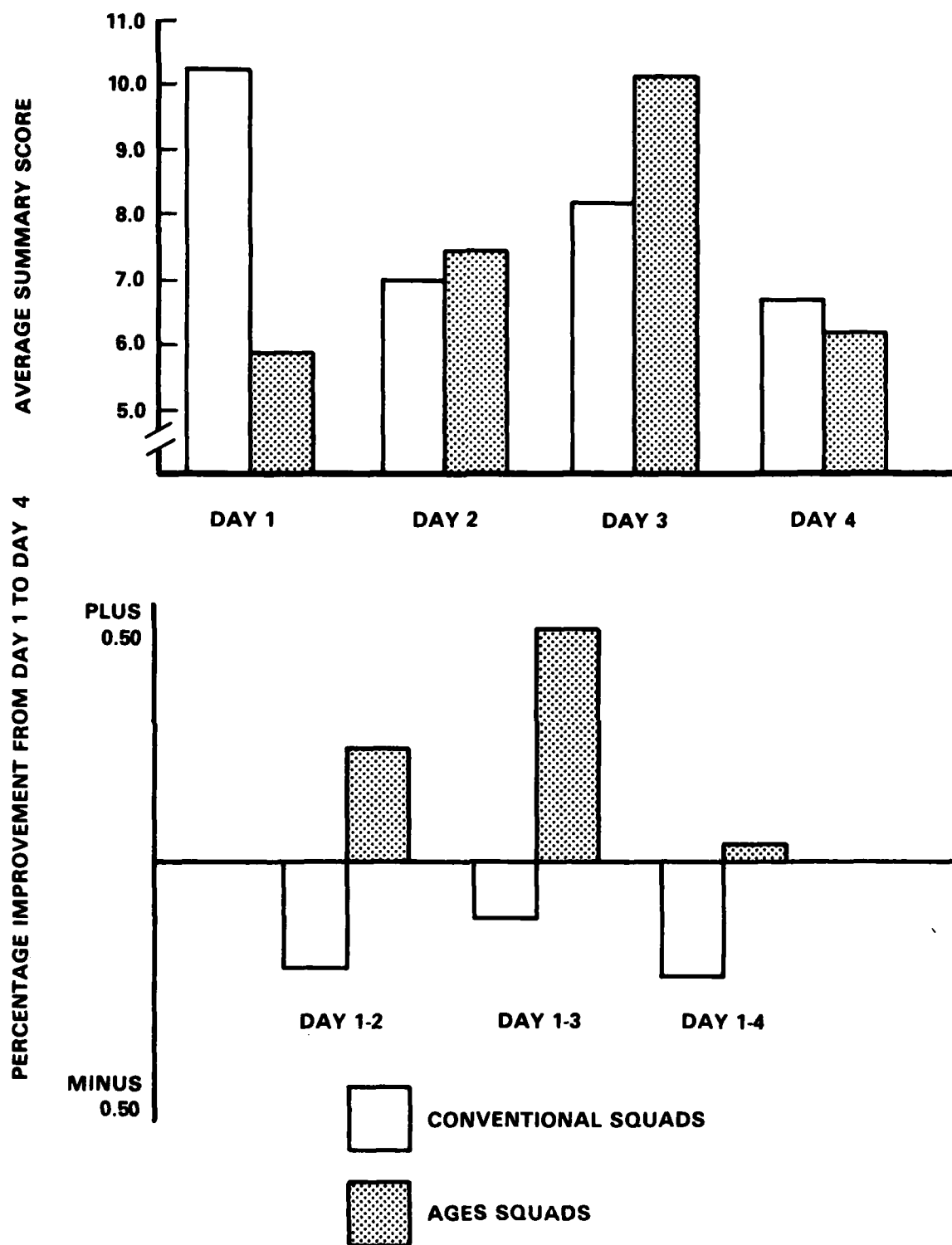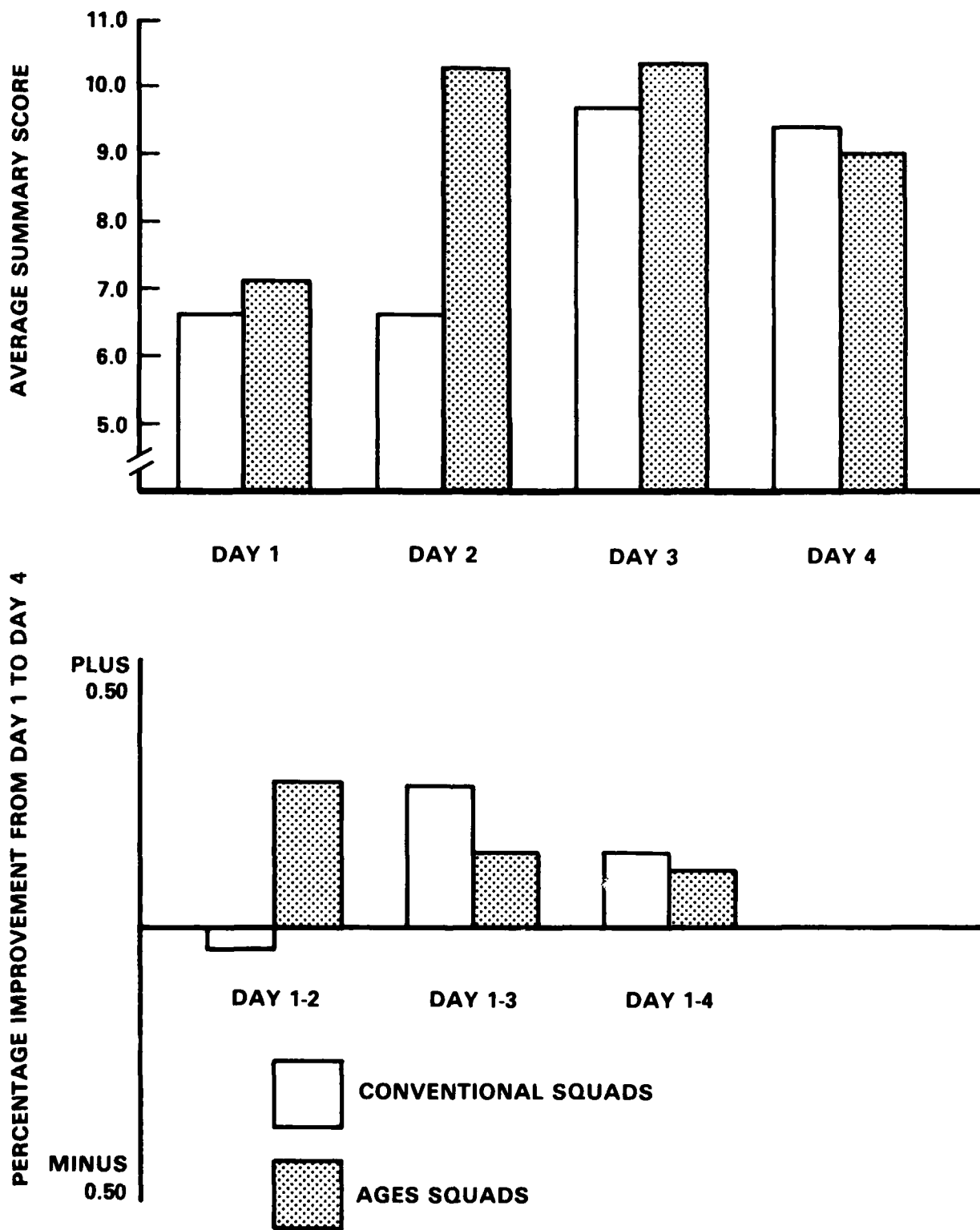
9

Figure 4. Chaparral crew performance.

10

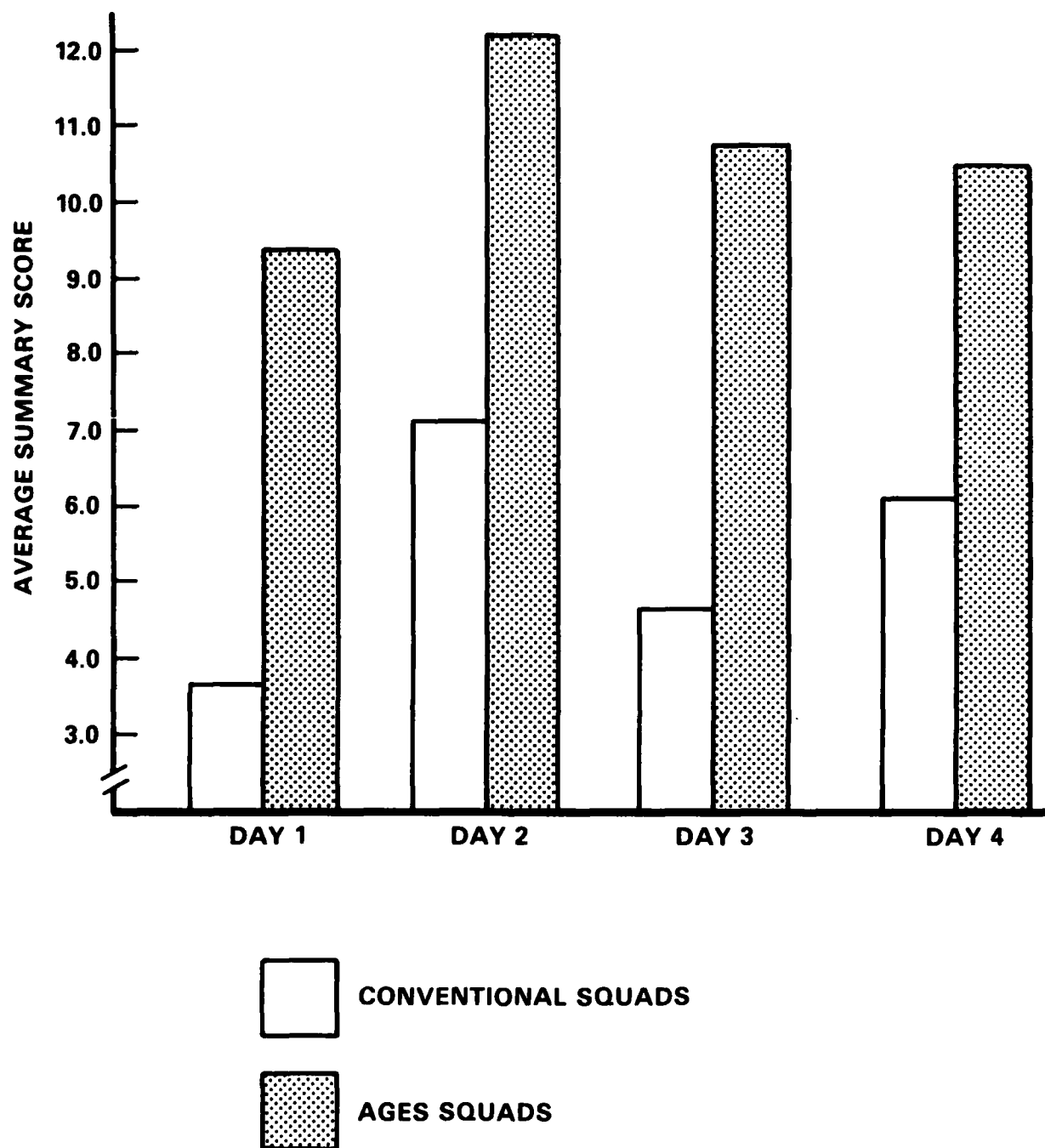Figure 5. Vulcan crew performance.

11

Figure 6.   Redeye crew performance.

about the same level. In the case of the Redeye squads, however, conventional training never brought those squads to the level achieved by AGES-trained squads.

The behavioral rating of air defense squads indicates somewhat of an advantage for AGES training. However, the finding is system specific and did not hold for Redeye teams. Several possible explanations are available; the first relates to interpersonal dynamics: the Redeye team consists of only two men who may not require the stimulation of a free-play, open-ended training environment to learn team skills such as communication and coordination. In contrast, Chaparral and Vulcan squads, which consist of more men, may benefit from such stimulation. Another explanation emphasizes the rated behaviors themselves, which are primarily procedural or process variables. They relate heavily to system operation, which can often benefit merely from practice. Practice was involved in both AGES and conventional training. Engagement simulation does not emphasize equipment operation per se, but rather concentrates on weapon employment. Rating process variables, while showing some effect for some weapon systems, may not have been adequate to show advantages for the Redeye team. Indirect evidence of the benefits of engagement simulation training can be seen in the questionnaire results presented below.

Aviation Debriefing Form. After each exercise, Cobra pilots were given a chance to rate how helpful they found their Scouts during the exercise. The helicopter pilots also had a completely free-play environment in which to work, and it was hypothesized that Cobras and Scouts would work together more efficiently after several exercises. Figure 7 shows the average rating given by Cobra pilots for the helpfulness of their Scouts in locating attack routes, identifying air defense threats, coordinating supporting fires, identifying good attack locations, and finding holding areas. Two Cobra pilots per aircraft, with two Cobras flying in both morning and afternoon exercises, rated Scout pilot performance in five performance categories, yielding 20 ratings per data point. These data were only collected through the first week (Phase IA) because the Cobra-Scout pilots were the same for Phases IA and IB. In 4 days, Cobra pilots found their Scouts almost twice as helpful as in the first day.

The data reported in Figure 7, along with the comments and enthusiasm with which the pilots participated in the exercises and in After Action Reviews, attest to the training impact of AGES on the aviation participants.

The aviation debriefing form was also used to determine how Cobra pilots were able to acquire ADA targets. Figure 8 shows the distribution of different factors that allowed acquisition of 50 ADA targets over a total of 16 exercises by Cobra pilots. The pilots found that unbroken silhouettes against the woodline were their best clue to the presence of an ADA weapon. Until ADA squads began to break the silhouettes of their weapon systems with camouflage, Cobra pilots were able to acquire them with relative ease.

Leaders' and Controllers' Questionnaire. In this questionnaire, participating squad and platoon leaders and controllers from the AGES training system were asked their opinion of the training effectiveness and importance of engagement simulation. This questionnaire was designed to be part of an inventory of the soldiers' attitudes toward the training they were receiving and their satisfaction with its effectiveness.

13

VERY
HELPFUL

AVERAGE RATING

10

(8.3)

(6.9)

(5.3)

(4.5)

1

VERY
USELESS

1   2   3   4

DAYS IN WEEK 1
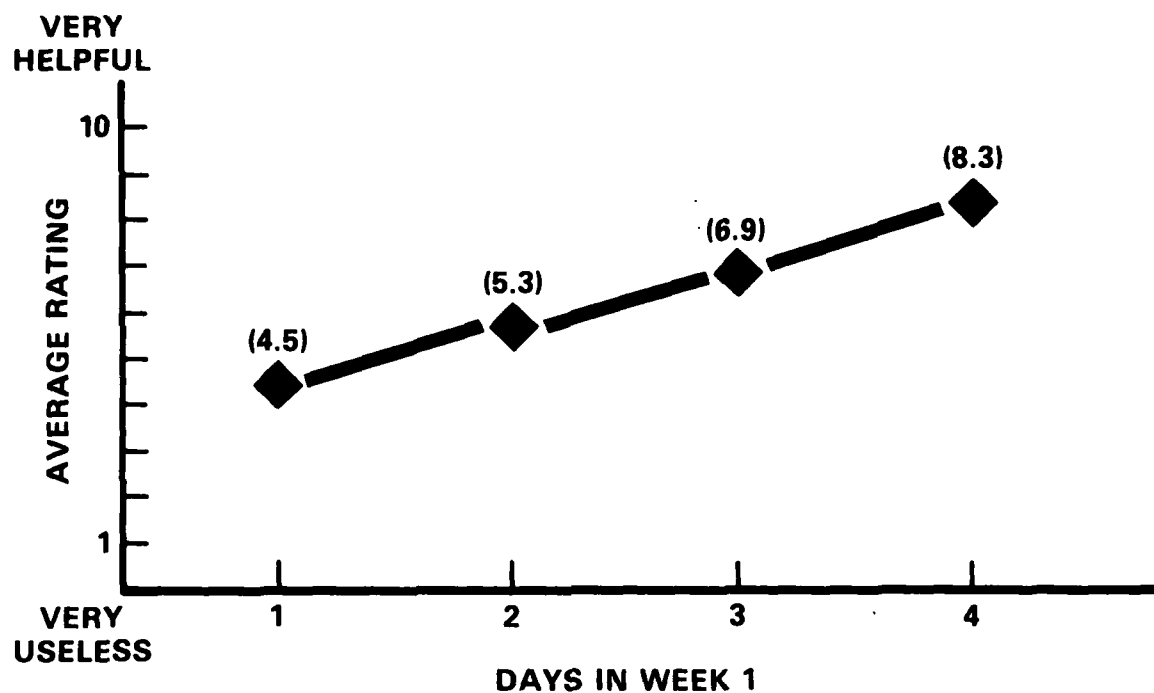
(20 RATINGS PER POINT)

NOTE: COBRA PILOTS RATED HOW HELPFUL SCOUTS WERE IN THE FOLLOWING
TASKS: LOCATING ATTACK ROUTES, IDENTIFYING ADA THREATS, COORDINATING
FIRE SUPPORT, IDENTIFYING GOOD ATTACK LOCATIONS, AND FINDING
HOLDING AREAS

Figure 7. Average ratings of Scout helpfulness.

14
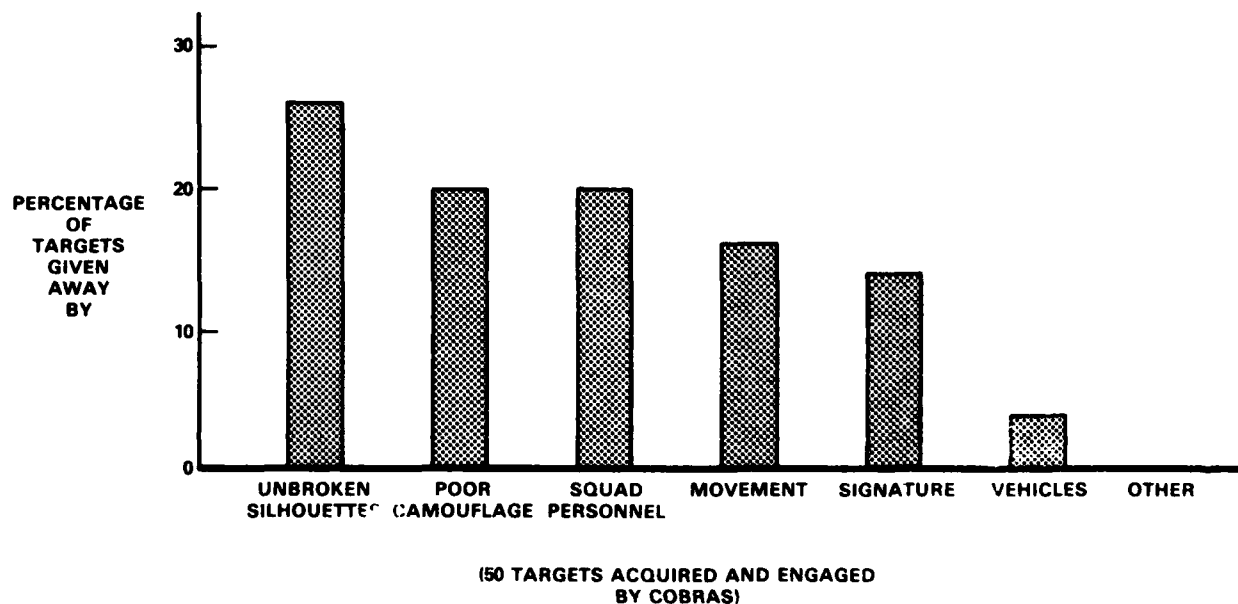
Figure 8. Cobra pilots' rating on what gave the ADA away.

The question shown in Figure 9 provides a good insight into the reactions exercise participants had to AGES training. When asked how they would divide their time, given a limited training schedule, leaders and controllers over-whelmingly favored AGES. Leaders and controllers said they would spend half their available training time using AGES--more than twice as much time as live-fire and over three times as much time as traditional field exercises.

Training Experience Questionnaire. This questionnaire (see Appendix D) was used to assess participants' overall attitudes toward their jobs, the training they were getting, and their careers. The questionnaire was administered at the beginning and end of each week. Figure 10 shows the results of this questionnaire summarized for Phases IA and IB.

AGES squads shown an average of a one-rating interval increase in their attitudes toward the training they were undergoing and a slight positive change in their career outlook. Conventionally trained squads show declines in their attitudes and job satisfaction and in their feelings toward the training they had received. This decline contrasts sharply to the positive change exhibited by AGES squads.

Conclusions

The goal of this phase was a comparison of AGES training with what has been labeled the conventional approach. Conventional training connotes structure and planning and is a logical carryover from individual training, in which molecular specific skills are taught in a systematic way. AGES, in contrast, stresses unit training in a realistic unstructured environment that attempts to mirror the combat situation. The results of Phase I indicate that AGES training, for its stated purposes, provided superior unit training for Chaparral and Vulcan air defense systems. Rated performance improved more quickly, representing a savings in time required for training. Participants indicated that they pre-ferred AGES training by a wide margin over other forms of training. Air defense artillery personnel also felt the behavioral rating forms developed for this project could be used to help in ARTEP performance evaluation.

PHASE II

Test Design

The purpose of Phase II was to evaluate procedures for integrating AGES with REALTRAIN. The missions used in Phase I consisted of the static defense of a critical asset and did not provide any ground security problems for the air defense squads. Aviators were not required to engage moving targets such as tanks, armored personnel carriers (APCs), and 2½-ton trucks. In existing REALTRAIN exercises, there is no capability for integrating airborne antiarmor weapons. This very realistic and probable threat for armor could be provided for REALTRAIN by using AGES techniques. In Phase II, an effort was made to de-termine if control procedures could be developed that permitted accurate and timely casualty assessment, permitted effective exercise control, and resulted in sufficient performance information to have an effective After Action Review. This exercise was the first time that three-dimensional engagement simulation was attempted.

16
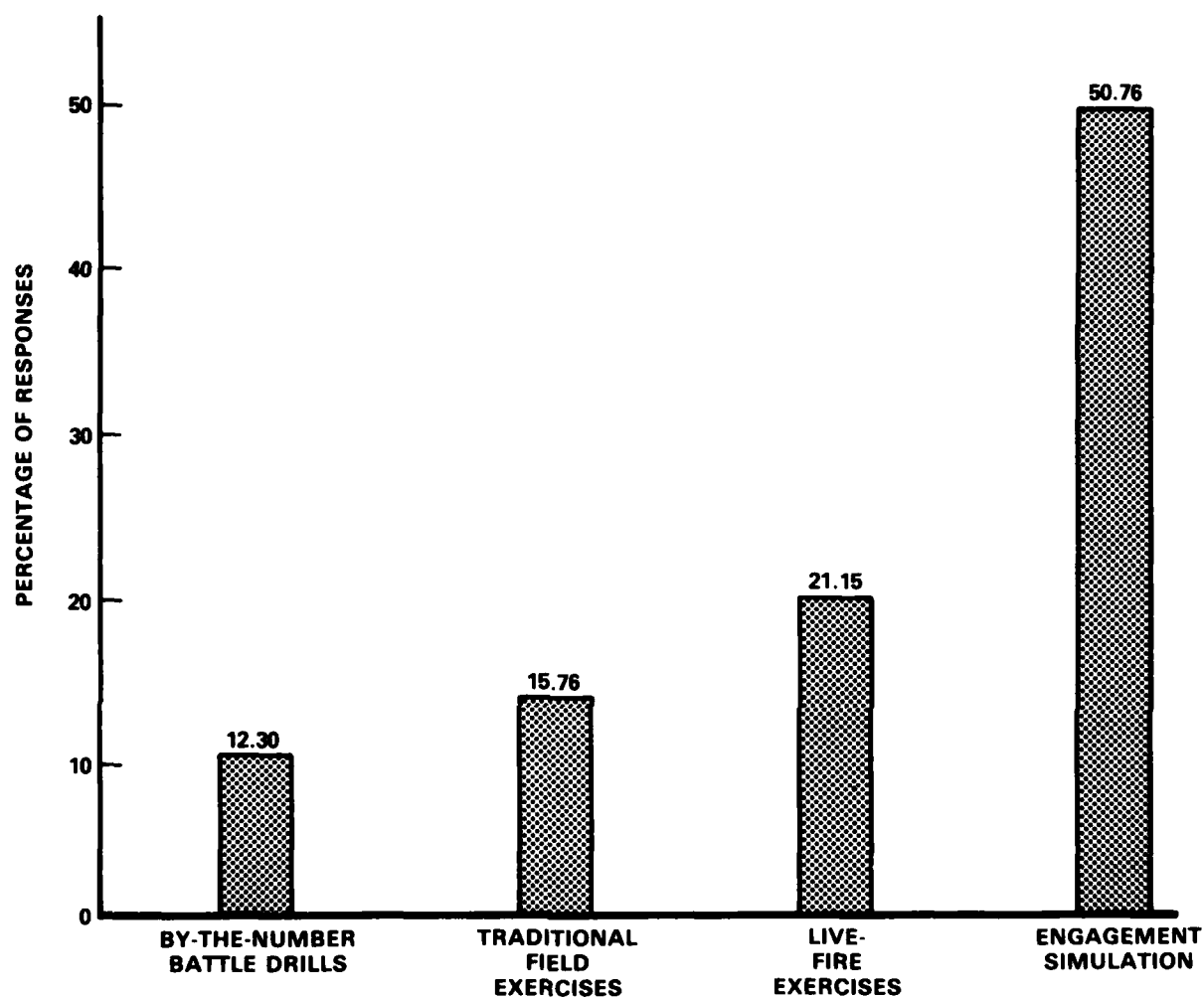
NOTE: QUESTION ASKED WAS, "IF YOU HAD LIMITED TIME FOR A TRAINING PROGRAM, HOW WOULD YOU DIVIDE YOUR TIME?"

Figure 9.   Mean responses to the leaders' and controllers' questionnaire.

17

AGES

MOST POSITIVE RATING

PRE POST   PRE POST   PRE POST

ATTITUDE/JOB   TRNG. EXERCISES   CAREER
SATISFACTION
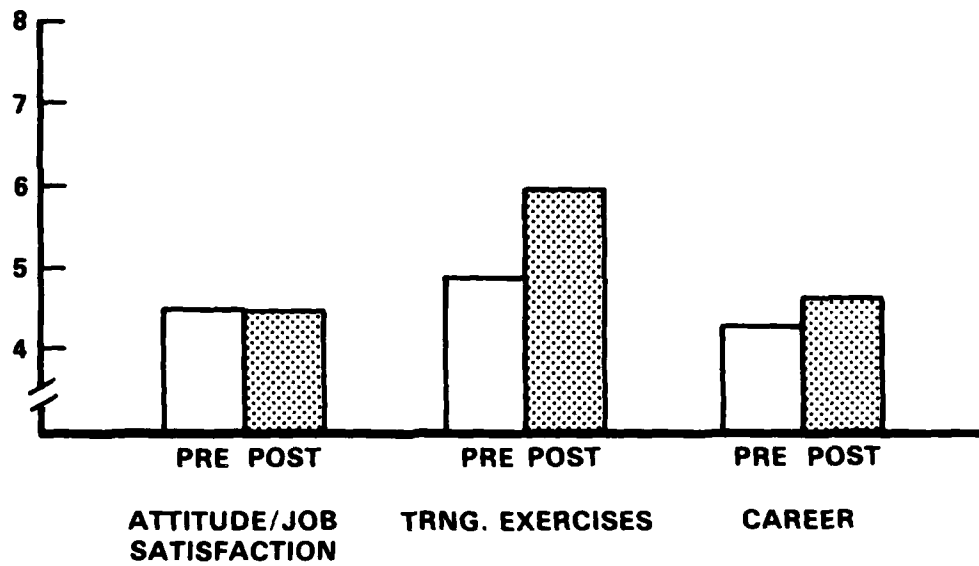
Ns PRE = 41
      POST = 39

CONVENTIONAL

MOST POSITIVE RATING

PRE POST   PRE POST   PRE POST

ATTITUDE/JOB   TRNG. EXERCISES   CAREER
SATISFACTION
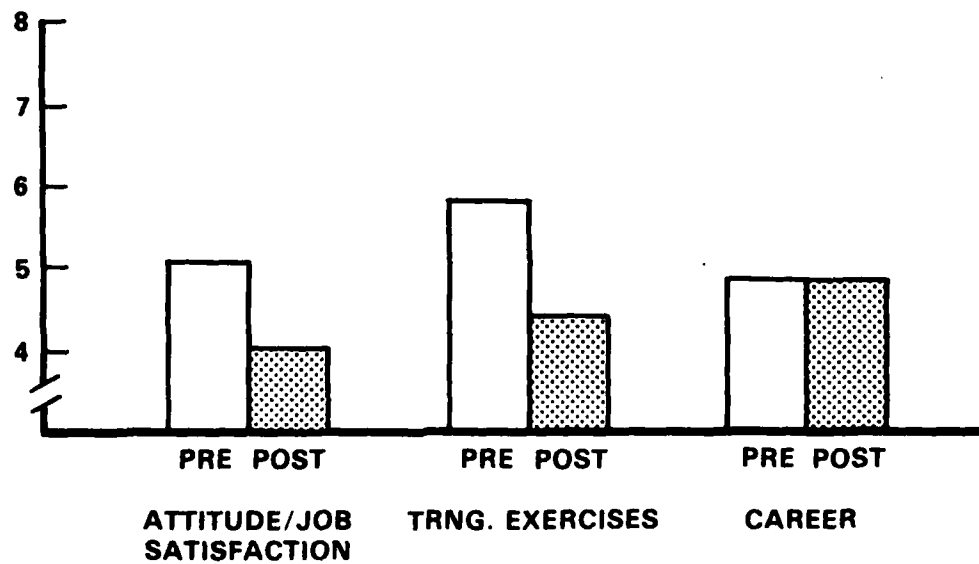
Ns PRE = 30
      POST = 26

Figure 10.   Mean responses to the training experience
           questionnaire.

18

Procedure

The operations order used as background for Phase II changed the mission of both ADA and aviation to "attack." The general scenario stated that the enemy main attack had been stopped along a defensive line near the international border. Enemy elements that had penetrated friendly lines were reduced to company size and were attempting to rejoin the major enemy forces. For Phase II exercises, ADA units were reinforced by ground elements and given the mission of providing protection for a convoy transporting critical material or personnel just behind front lines.[3] The helicopter forces were augmented by ground forces and given missions to perform zone reconnaissance and locate and destroy any enemy forces within the zone.

Figure 11 provides an example of the general tactical situation used in Phase II. A convoy route, usually 20 to 30 km in length, was assigned to a convoy commander whose mission was to transport high-value material. The route would snake through woods and occasionally break out of the woods and run along the edge of a clearing. The convoys usually consisted of several trucks and jeeps, three tanks, four Vulcans, and an infantry squad. There were also four Chaparrals and Redeyes that the convoy commander could pre-position along the convoy route. The three Scouts and two Cobra-TOWs operating in the area were augmented by a ground force consisting of two tanks and an infantry squad equipped with LAWs and DRAGONs. To facilitate the meeting of the two forces, the test directorate placed the infantry and armor working with the helicopters in a section of the woods along the convoy route. Infantry Scouts could then call in the Cobra-TOWs when the convoy was observed. A series of ambushes usually developed, against which the convoy commander was forced to defend.

Each day in Phase II, which lasted 4 days, two convoys were run, one in the morning and another in the afternoon. A different convoy commander was assigned for each exercise. The convoy commander ranged from the ADA battery commander, a captain, to the noncommissioned officer in charge (NCOIC) for the test, a sergeant first class.

All weapon systems were equipped with signature and weapon effects simulators. In addition to AGES equipment for ADA and aviation, all armor and infantry players were equipped with REALTRAIN equipment: infantry was equipped with scopes and blank ammunition for their M16s and numbered helmet covers. LAW and DRAGON fire was simulated using hand grenade simulators, and tank main gun fire was simulated using the Hoffman device. As shown in Figure 2, a REALTRAIN controller joined the ground control center and had radio communications with infantry squad and tank controllers.

The eight exercises in Phase II were run to determine the feasibility of integrating AGES and REALTRAIN exercises by (a) assessing the accuracy and timeliness of casualty assessment performed by the exercise control system, and (b) gathering information in After Action Reviews on the realism and training impact of the exercises.

---

[3] The AGES test was conducted in a farming area for which the Army had obtained maneuver rights. It was necessary to restrict the ground elements to prepared roads, and hence to a convoy mission.
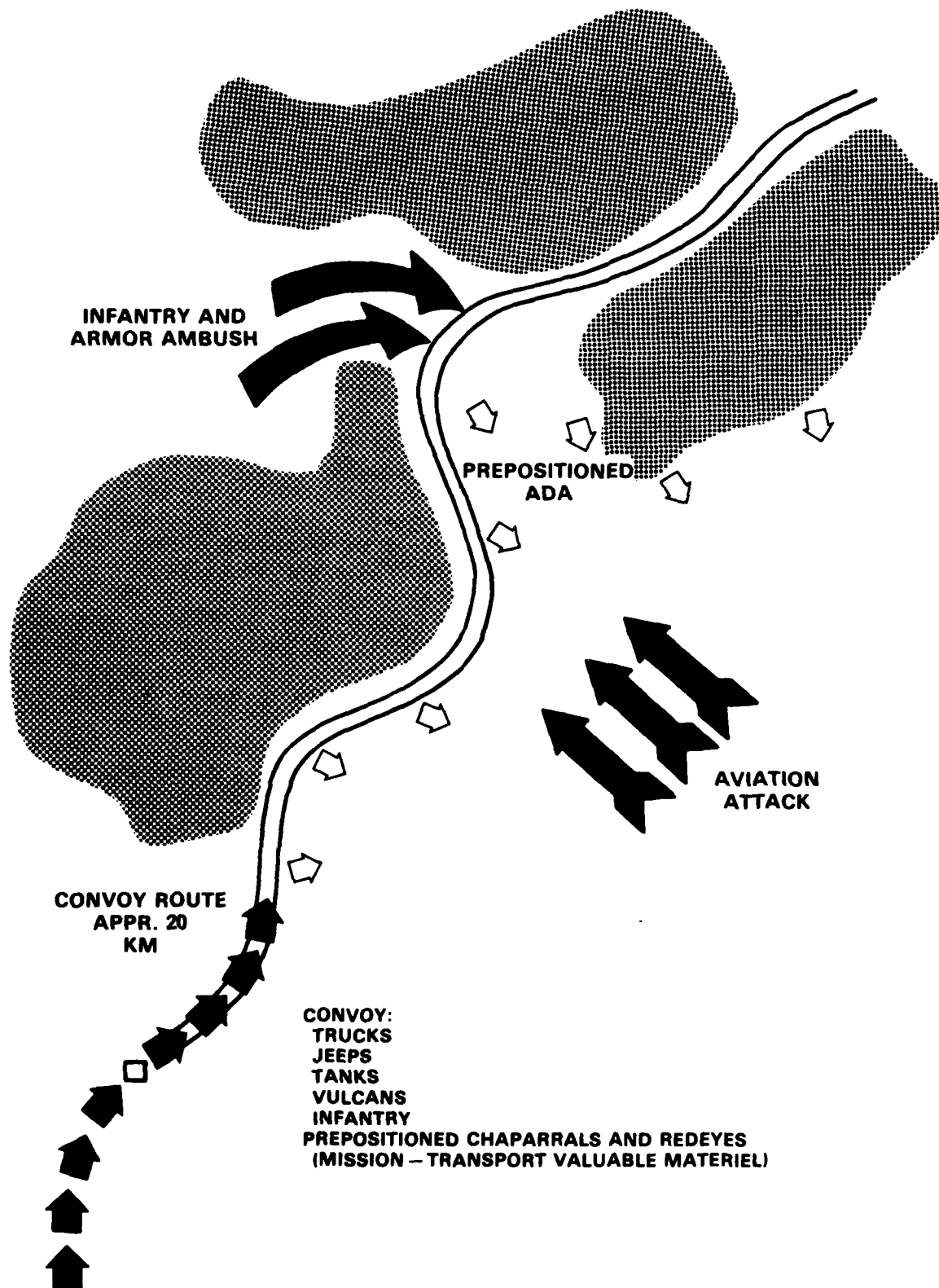
Figure 11. AGES test design, Phase II.

Results and Conclusions

The eight exercises run in Phase II demonstrated that it is feasible to integrate AGES with REALTRAIN to achieve three-dimensional, combined arms engagement simulation. Limitations and problems are outlined below, as are areas requiring refinement. But in the words of a second lieutenant leading a Vulcan platoon during Phase I and the convoy for one exercise in Phase II, the action during the convoy ambushes ". . . was as close to combat as I could imagine." This young lieutenant was in his first field training exercise in the Army and thought the sights, sounds, and collective dynamics of men and equipment under fire when he was commanding the convoy approached his expectations of combat. This same lieutenant, who was the convoy commander in the afternoon of the third day, was the only individual to get the convoy through intact. His task had been to use all the information gathered through earlier failures and plan accordingly. This approach worked, and the tactical success of this lieutenant was most striking. Observations on specific components of the training system are listed below.

Signature Simulation. Comprehensive signature simulation is important in creating and maintaining a realistic combat environment. Several comments were made that the occurrence of unexpected detonations of hand grenade signature simulators (simulating LAW firings) and Hoffman rounds (simulating the tank main gun firing) at the start of an ambush created a degree of confusion that could occur in combat. Position disclosure effects of signature simulators also appeared to be important in Phase II.

Exercise Control and Casualty Assessment. A REALTRAIN controller, a ground controller, and an air controller can work side by side using an exercise map and a control radio network to control a three-dimensional engagement simulation exercise effectively, at least for an exercise of the size conducted during Phase II. It is also important that the various tactical events that occur are somewhat distributed over time because too numerous simultaneous engagements would be difficult to control in terms of timely and accurate casualty assessment. An explicit attempt was made to overload the control system in one exercise, using five Cobra-TOWs and three Scout helicopters against the convoy. This density of aircraft working along a 20 km convoy route, with the resulting number of engagements, was beyond the capabilities of the ground control system. If ground forces are not constrained in a convoy and have free access to terrain for combined AGES/REALTRAIN exercises, the density of engagements per unit time should be less than that occurring with the convoy. More vehicles and aircraft could be involved, and control and casualty assessment should still be timely and accurate.

Summary

Phase II demonstrated to the test directorate and personnel of the supporting 8th Infantry Division that such combined AGES/REALTRAIN exercises are indeed possible:

• AGES and REALTRAIN can be integrated in the field;

21

- A REALTRAIN controller can be added to work in the AGES ground control center alongside a ground controller and an air controller without any major problems; and

- Test personnel and participating 8th Infantry Division personnel felt that realistic, three-dimensional engagement simulation training can result from combining AGES and REALTRAIN into a more comprehensive combined arms tactical training exercise.

APPENDIX A

ADA CONTROLLER EVALUATION FORM--CHAPARRAL

Controller
Date
Squad No.
am_____ pm _____

Provide one or two words on the following topics:

    Terrain: _____

    Metereological conditions: _____

What was the PTL for this exercise? _____

What was the assigned position for the squad? _____

What was the actual position taken by the squad? _____

1) PLANNING AIR DEFENSE

    Did the squad know its tactical mission?   YES   NO

    Did the squad know the location of the
      rest of the defense?   YES   NO

    Did they know the call signs for the rest
      of the defense?   YES   NO

2) ISSUE WARNING O. ER

    Did the squad know the current enemy and friendly
      situation?   YES   NO

RATE Attentiveness of squad to alert or control status. _____

3) SELECT POSITIONS

RATE The position selected for the FU, in terms of
      accessibility, visibility, and proper terrain. _____

RATE The position selected for the CP. _____

    Did personnel find good prone positions and
      improve these with cover or digging?   YES   NO

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

4) OCCUPATION OF POSITIONS

RATE   Litter discipline during movement and occupation of positions. _____

RATE   CP and FU's are brought to "ready for action" status as rapidly as possible (CP's & FU's 30 min). _____

RATE Local security upon occupation of position. _____

      a. Communication hot loop established?   YES   NO

      b. Ground defense plan established?   YES   NO

      c. Orientation of weapons system matched PTL
          designated by SL?   YES   NO

      d. Small arms firing sectors designated?   YES   NO

RATE Camouflage and camouflage discipline. _____

5) COMMAND AND CONTROL

RATE Unit received, processed, and disseminated air defense information, intelligence and control measures to other squads and to platoon leader. _____

RATE Coordination and communication between SL and SG. _____

RATE Coordination and communication between SL and FOP. _____

RATE Reliance of squad on pre-established, effective SOP's. _____

RATE Effective communications were properly maintained within the defensive position. _____

6) VISUAL SEARCH AND SCAN

    Did SL establish a command post (CP) behind and to
    side of weapon , clear of back blast?   YES   NO

    Did the CP have a clear field of view to the rear?   YES   NO

    Was a forward observation post (FOP) established?   YES   NO

    Was it along the primary target line (PTL)?   YES   NO

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

24

Was visibility at least 2-5 km from the weapon?	YES	NO
Did the SG orient the mount with 12 o'clock along PTL?	YES	NO
Did the SG have at least 2-5 km visibility along PTL and 4 km to sides and rear?	YES	NO
Did observers use proper scanning techniques for terrain? (Vertical for hilly terrain, horizontal for flat.)	YES	NO

RATE   Observers' scanning behaviors on the basis of proper
            sectors scanned by FOP and CP, and observers' be-
            haviors after aircraft alert.   _____

RATE   Attentiveness of squad to visual search and scan.   _____

7)   TARGET DETECTION

Did the detecting squad member announce "Target" over the intercom?	YES	NO

RATE   The quality of target alert on the basis of use of
            clock azimuth, target altitude (high/low), and
            single/multiple target designation.   _____

Did the detector return to visual search of assigned *section* after target hand-off?	YES	NO

8)   TARGET TRANSFER

Did SL and SG commence visual search immediately at alert?	YES	NO

RATE   Observer/SL hand-off.   _____

RATE   SL/SG hand-off.   _____

Did SG slew mount toward target?	YES	NO
Did the SG report "Contact" when visual acquisition was made?	YES	NO

RATE   Smoothness of target tracking.   _____

Was target tracked slightly off reticle pattern, giving a clear, consistent missile tone?	YES	NO
Did the hold fire lamp remain off throughout engagement sequence?	YES	NO

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

9) TARGET SELECTION

   If multiple targets, RATE SL target selection per
   priorities.   _____

RATE   SL assessment of size of raid and nature of threat.   _____

10) TARGET IDENTIFICATION

RATE   Accuracy and timeliness of target ID.   _____

11) ENGAGEMENT COMMAND

   Did engagement command usually contain the following
   information/items:

      the word "engage"?   YES   NO

      the target category?   YES   NO

      the term "hostile"?   YES   NO

12) GUNNER VISUAL ACQUISITION

RATE   Responsiveness of SG in the mount to changes in
       target attitude.   _____

13) IR ACQUISITION

   Did the SG announce "Tone" over the intercom during
   IR acquisition?   YES   NO

14) MISSILE LAUNCH

   Did the SG immediately employ the appropriate technique
   based upon target category?   YES   NO

15) KILL EVALUATION

RATE   The SL's evaluation of whether or not additional
       missiles should be fired; consider category of
       target engaged and range of engagement.   _____

RATE   Reload/misfire reactions (if applicable).   _____

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

16) IMPROVE POSITIONS

RATE The improvement of natural camouflage.   _____

     a. Used camouflage nets?   YES   NO

     b. Applied personal camouflage?   YES   NO

     c. Camouflaged crew served & FU position?   YES   NO

RATE Unit personnel improved FU weapon position.   _____

17) CONDUCT SUSTAINING OPERATIONS

RATE Unit displaced FU's to alternate locations to prevent targeting
     after engagements.   _____

     Unit rendered required reports (Admin/Tactical)?   YES   NO

     Unit redistributed ammunition as required?   YES   NO

RATE Unit properly maintained organic equipment.   _____

     a. Performed daily equipment checks?   YES   NO

     b. Corrected shortcomings and deficiencies?   YES   NO

     c. Maintained maintenance records?   YES   NO

     d. Performed field expedient repair?   YES   NO

RATE Unit updated local security plan.   _____

RATE Squad local security from ground attack.   _____

18) GENERAL

RATE General motivational level of squad and interest
     in operation.   _____

     Accuracy with which the Ground Control Station
     assessed casualties.   _____

     Perceived fairness of controller judgements.   _____

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

27

APPENDIX B

ADA CONTROLLER EVALUATION FORM--VULCAN

Controller
Date
Squad No.
am_____ pm_____

Provide one or two words on the following topics:

    Terrain: _____

    Metereological conditions: _____

What was the PTL for this exercise? _____

What was the assigned position for the squad? _____

What was the actual position taken by the squad? _____

1) PLANNING AIR DEFENSE

    Did the squad know its tactical mission?   YES   NO

    Did the squad know the location of the rest of
      the defense?   YES   NO

    Did they know the call signs of the rest of
      the defense?   YES   NO

2) ISSUE WARNING ORDER

    Did the squad know the current enemy and friendly
      situation?   YES   NO

RATE Attentiveness of squad to alert or control status. _____

3) SELECT POSITIONS

RATE The position selected for the FU, in terms of
        accessibility, visibility, and proper terrain. _____

RATE The position selected for the CP. _____

    Did personnel find good prone positions and
      improve these with cover or digging?   YES   NO

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

4) OCCUPATION OF POSITIONS

RATE Litter discipline during movement and occupation
      of positions.   _____

RATE CP and FU's are brought to "ready for action"
      status as rapidly as possible (CP's & FU's 30 min). _____

RATE Local security upon occupation of position.   _____

    a. Communication hot loop established?   YES   NO

    b. Ground defense plan established?   YES   NO

    c. Orientation of weapons system matched PTL
        designated by SL?   YES   NO

    d. Small arms firing sectors designated?   YES   NO

RATE Camouflage and camouflage discipline.   _____

5) COMMAND AND CONTROL

RATE Unit received, processed, and disseminated air de-
      fense information, intelligence and control mea-
      sures to other squads and to platoon leader.   _____

RATE Coordination and communication between SL and SG.   _____

RATE Coordination and communication between SL and FOP. _____

RATE Reliance of squad on pre-established, effective SOP's. _____

RATE Effective communications were properly maintained
      within the defensive position.   _____

6) VISUAL SEARCH AND SCAN

RATE Selection and designation of emplacement posts on
      the basis of terrain and tactical situation.   _____

RATE Attentiveness of squad to visual search and scan.   _____

7) TARGET DETECTION

    Did observer usually return to scanning the assigned
    visual sector after hand-off?   YES   NO

RATE Quality of target alert on the basis of clock
      azimuth and target altitude (high/low)?   _____

				RATING SCALE				
Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

8) TARGET TRANSFER TO SL AND SG

    Did SL acquire target with and without binoculars?   YES   NO

    Did SG immediately slew cannon to announced azimuth?   YES   NO

RATE Observer/SL hand-off.   _____

RATE SL/G hand-off.   _____

    Did SG report "ON TARGET" after visual acquisition?   YES   NO

9) TARGET SELECTION

RATE SL assessment of size of raid and nature of threat.   _____

RATE SL target selection (if multiple targets occurred).   _____

10) GUNNER VISUAL ACQUISITION AND TRACKING

RATE Responsiveness of G to changes in target attitude.   _____

    Did gunner traverse mount to approach target from
      the rear?   YES   NO

RATE Smoothness of tracking.   _____

11) TARGET IDENTIFICATION

RATE Accuracy and timeliness of target ID.   _____

12) ENGAGEMENT COMMAND

    Did SL usually give the command to engage using the
      words "HOSTILE" and "ENGAGE"?   YES   NO

13) RADAR ACQUISITION

RATE Radar acquisition procedures and response.   _____

14) FIRING

    Did G return cannon to PTL?   YES   NO

    Did G check to make sure cannon was clear?   YES   NO

    Did G report rounds expended/rounds remaining to SL?   YES   NO

RATE Adequacy of repeated bursts for target array.   _____

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

15) KILL EVALUATION

RATE Reload/misfire reactions (if applicable).   _____

16) IMPROVE POSITIONS

RATE The improvement and supplementation of natural
      camouflage techniques.   _____

      a. Used camouflage nets?   YES   NO

      b. Applied personal camouflage?   YES   NO

      c. Camouflaged crew served & FU position?   YES   NO

RATE Unit personnel improved FU weapon position.   _____

17) CONDUCT SUSTAINING OPERATIONS

RATE Unit displaced FU's to alternate locations to pre-
      vent targeting after engagements.   _____

      Unit rendered required reports (Admin/Tactical)?   YES   NO

      Unit redistributed ammunitions as required?   YES   NO

RATE Unit properly maintained organic equipment.   _____

      a. Performed daily equipment checks?   YES   NO

      b. Corrected shortcomings and deficiencies?   YES   NO

      c. Maintained maintenance records?   YES   NO

      d. Performed field expedient repair?   YES   NO

RATE Unit updated local security plan.   _____

RATE Squad local security from ground attack.   _____

18) GENERAL

RATE General motivational level of squad and interest
      in operation.   _____

      Accuracy with which the controller assessed
      casualties.   _____

      Perceived fairness of controller judgments.   _____

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

32

APPENDIX C

ADA CONTROLLER EVALUATION FORM--REDEYE

Controller
Date
Squad No.
am _____ pm _____

Provide one or two words on the following topics:

    Terrain:_____

    Meteorological conditions: _____

What was the PTL for this exercise? _____

What was the assigned position for the team? _____

What was the actual position for the team? _____

1) PLANNING AIR DEFENSE

    Did the team know its tactical mission?   YES   NO

    Did the team know the location of the rest of
      the defense?   YES   NO

    Did they know the call signs for the rest of
      the defense?   YES   NO

2) WARNING ORDER

    Did the squad know the current enemy and
      friendly situation?   YES   NO

RATE   Attentiveness of squad to alert or control
       status.   _____

3) SELECT POSITIONS

RATE   Positions selected by team on the basis of
       cover and location   _____

RATE   Use of camouflage   _____

    Did team have adequate back blast area?   YES   NO

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

4) OCCUPATION OF POSITIONS

RATE   Camouflage and camouflage discipline.   _____

RATE   Local security of position.   _____

5) COMMAND AND CONTROL

RATE   Team received, processed, and disseminated Air
        Defense information, intelligence, and control
        measures to other squads and platoon leader.   _____

6) VISUAL SEARCH AND SCAN

        Did the team have a good clear field of view along
        this PTL?   YES   NO

RATE   Attentiveness of team to visual search and scan.   _____

7) ENGAGEMENT

RATE   Conduct of engagement and firing procedures.   _____

8) CONDUCT SUSTAINING OPERATIONS

RATE   Displacement to new location after engagements.   _____

RATE   Reports were rendered for tactical and
        administrative information.   _____

9) GENERAL

RATE   General motivational level of squad and interest
        in operation.   _____

RATE   Accuracy with which Ground Controller assessed
        casualties.   _____

RATE   Perceived fairness of controller judgements.   _____

RATING SCALE

Very Inadequate								Very Adequate
1	2	3	4	5	6	7	8	9

34

APPENDIX D

TRAINING EXPERIENCE QUESTIONNAIRE

The Army Research Institute is currently involved in evaluating the effectiveness of different forms of training. We are trying to determine what soldiers expect from field training exercises, and what they believe they actually got out of them. You will be asked to fill out this questionnaire on several occasions.

Your answers are very important. They will help form the basis for improvements in current training programs. This is an opportunity for you to have a real voice on your training. This is not a test and there are no right or wrong answers. We need your honest opinions in order to improve the program. If you are asked to rate a particular phase of training that is very good then say so; and if it is very bad, do not hold back. Tell it like it is.

Only scientists from the Army Research Institute will see your individual responses, and Army officials will only get a summary of the results for the whole study. Your name and your unit will never be assigned to your individual responses. Your privacy is protected. No one has a better chance to observe your training than you do.

Please answer every item in the questionnaire. If you have any questions at any time you can ask the person who handed you this form. If you have any comments that you would like to make, feel free to write on the back of the question pages.

PT 5166 B

Instructions on How to Use the Rating Scales

Items in the questionnaire will be written in several different
ways. Some will ask for specific information such as how much time
remains in your current enlistment, and all you have to do is circle the
answer which is closest to your particular situation (i.e., 2 months).
Most questions ask you to make a judgement along an 8 Point Scale which
has descriptive terms at each end. Most common will be scales of agreement
as in the following example:

Example 1:

```
                        Rating Scale
Strongly  1   2   3   4   5   6   7   8   Strongly
Disagree                                  Agree
```

1. Field training is superior to classroom   (Circle one)
   instruction.   1   2   3   4   5   6   7   (8)

A statement is presented and you must decide whether or not you agree
with it. You may circle any number between 1 and 8 which best represents
your amount of agreement of disagreement. In example 1 where 8 is
circled, the respondent strongly agreed that field training is superior.
If he had agreed but not as strongly then he might have circled any
number between 5 and 8. Likewise, if he had disagreed then he would
have circled any number between 1 and 4.

Example 2:

```
                        Rating Scale
Strongly  1   2   3   4   5   6   7   8   Strongly
Disagree                                  Agree
```

                                                     (Circle one)

2. Tanks are more effective than TOWs.   1   2   (3)   4   5   6   7   8

ADP Use
Card 1
2-5

Questions 1 through 7 deal with background information
that is needed for statistical purposes. Please read each question
carefully before attempting to complete it.

1. Today's date: _ _/ _ _/ _ _   6-11
                     day month year

2. Are your regularly assigned to the same squad that you
    are assigned to for this exercise?   12

    Yes ___ (1)
    No ___ (2)

3. Duty MOS: _____   13-17

4. What is your duty position (for example: gunner, driver,
    squad leader, etc.)? _____   18-27

5. What is your pay grade?   28

    E-1 or E-2 ___ (1)

    E-3 ___ (3)

    E-4 ___ (4)

    E-5 ___ (5)

    E-6 ___ (6)

    E-7 or above ___ (7)

6. How long have you been in your current pay grade?   29

    1) 1 month or less ___   4) 6 months to 1 year ___

    2) 2 to 3 months ___   5) more than 1 year ___

    3) 4 to 5 months ___

7. How long do you have left on your current enlistment?   30

    1) 1 month to less ___   4) 6 months to 1 year ___

    2) 2 to 3 months ___   5) more than 1 year ___

    3) 4 to 5 months ___

GO TO PAGE 4

In example 2, the respondent disagreed with the statement but did not strongly disagree.

For all questions provide each answer according to how you see it and not according to how you think someone wants you to answer. Feel free to use the entire scale. There is no reason to avoid the end points. If you strongly agree or strongly disagree then say so. The same rule applies to scales with different verbal descriptors at the ends.

Not all scales involve agreement and disagreement; so read the words attached to each scale.

Read each statement. Decide whether or not you agree with it and
to what degree. Circle the number which most closely describes your
degree of agreement or disagreement.

Strongly Disagree	1	2	3	4	5	6	7	8	Strongly Agree

Circle one number for each statement

8. I enjoy the day to day work of my job.   1 2 3 4 5 6 7 8   31

9. I gain a sense of accomplishment from
the day to day activities of my job.   ] 2 3 4 5 6 7 8   32

0. My job in the Army is exciting.   1 2 3 4 5 6 7 8   33

1. I am satisfied with my job in the
Army.   1 2 3 4 5 6 7 8   34

2. If a man in my squad needs help, he can
count on the others to provide it.   1 2 3 4 5 6 7 8   35

3. The members of my squad work together
as a team.   1 2 3 4 5 6 7 8   36

4. My squad does high quality work.   1 2 3 4 5 6 7 8   37

5. The training exercises we are currently
involved in are very similar to actual
combat.   1 2 3 4 5 6 7 8   38

6. This type of training increases my
desire to reenlist.   1 2 3 4 5 6 7 8   39

7. This training has (will) improve my
ability to perform combat duties.   1 2 3 4 5 6 7 8   40

8. I would prefer to stay with my squad
rather than transfer to another.   1 2 3 4 5 6 7 8   41

Strongly Disagree	1	2	3	4	5	6	7	8	Strongly Agree

ADP Use

19. Rate how realistic you think these exercises are (if you
have not participated yet rate how realistic you think
they will be).   42

          Very 1   2   3   4   5   6   7   8 Very
          Unrealistic   Realistic

20. Rate how effective you think these exercises are (or will
be) in training you for combat.   43

          Very 1   2   3   4   5   6   7   8 Very
          Ineffective   Effective

21. Compared to other types of field exercises, rate the value
of this exercise to you (or how valuable you think it might
be).   44

          Very 1   2   3   4   5   6   7   8 Very
          Useless   Useful

22. How valuable do you think this exercise is (or will be)
for the other men in your squad?   44

          Very 1   2   3   4   5   6   7   8 Very
          Useless   Useful

23. Rate whether you like (or will like) doing this type
of exercise compared to other types of exercises.   45

          Dislike 1   2   3   4   5   6   7   8 Like
          Strongly   Strongly

24. How likely is it that you will reenlist at the end of
your current enlistment?   46

          Very 1   2   3   4   5   6   7   8 Very
          Unlikely   Likely

25. Do you think that you will pursue a career in the Army?   47

          Very 1   2   3   4   5   6   7   8 Very
          Unlikely   Likely

ADP Use

Questions 26 & 27 are for leaders <u>only</u>. If you are not in a
leadership position then do not answer them.

26. These training exercises have (will) improve (d) my ability
     to explain to my men what I want them to do.   48

          Strongly 1   2   3   4   5   6   7   8 Strongly
          Disagree   Agree

27. These training exercises can increase my awareness of
     my men's capabilities.   49

          Strongly 1   2   3   4   5   6   7   8 Strongly
          Disagree   Agree

_____

You are finished with this questionnaire. Go back and make sure you
have not skipped any items.

032583